



IFW

PTO/SB/21 (09-04)
Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

| | | |
|---|------------------------|-------------------|
| TRANSMITTAL FORM (to be used for all correspondence after initial filing) | Application Number | 10/581,673 |
| | Filing Date | June 5, 2006 |
| | First Named Inventor | Hisanobu MATSUZOE |
| | Art Unit | Not yet assigned |
| | Examiner Name | Not yet assigned |
| Total Number of Pages in This Submission | Attorney Docket Number | 25000.0002 |

| ENCLOSURES (Check all that apply) | | |
|--|--|---|
| <input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Reply to Missing Parts/ Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53 | <input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____ <input type="checkbox"/> Landscape Table on CD | <input type="checkbox"/> After Allowance Communication to TC <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): -Copy of the Int'l Search Report with English language translation of thereof. |
| Remarks | | |

| SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT | | |
|--|------------------------|-----------------|
| Firm Name | Akerman Senterfitt | |
| Signature | <i>Jean C. Edwards</i> | |
| Printed name | Jean C. Edwards, Esq. | |
| Date | August 15, 2006 | Reg. No. 41,728 |

| CERTIFICATE OF TRANSMISSION/MAILING | | | |
|---|--|------|--|
| I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below: | | | |
| Signature | | | |
| Typed or printed name | | Date | |

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of :

Hisanobu MATSUZOE

Group Art Unit: Not Yet Assigned

Filed: June 5, 2006

Examiner: Not Yet Assigned

Based on: PCT/JP2004/018514

Atty Dkt No: 25000.00002

Application No.: 10/581,673

Customer No.: 57362

Confirmation No.: Not Yet Assigned

For: DISCHARGE CONTROL UNIT, METHOD FOR CONTROLLING DISCHARGE
OF THE SAME, AND METHOD FOR PRODUCING THE SAME

**SUBMISSION OF INTERNATIONAL SEARCH REPORT WITH ENGLISH
LANGUAGE TRANSLATION THEREOF**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sirs:

The attention of the U.S. Patent and Trademark Office is hereby directed to the International Search Report (ISR) dated March 8, 2005, along with the English language translation thereof. The Japanese Unexamined Patent Publication No. JP 2003-326756, cited therein, has already been disclosed in the Information Disclosure Statement filed on June 5, 2006.

No fee is believed to be required. Should any fee be required, please charge any deficiency to Deposit Account No. 50-0951.

Respectfully submitted,

Jean C. Edwards
Jean C. Edwards
Registration No. 41,728

(57362)
AKERMAN SENTERFITT
801 Pennsylvania Avenue N.W.
Suite 600
Washington DC 20004
Telephone: 202-824-1719
Facsimile: 202-393-5959
Date: August 15, 2006



INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/018514

A. CLASSIFICATION OF SUBJECT MATTER
Int.Cl⁷ B41J2/415

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
Int.Cl⁷ B41J2/415, G03G15/05, 15/22, H01T19/00, 23/00Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2005
Kokai Jitsuyo Shinan Koho 1971-2005 Toroku Jitsuyo Shinan Koho 1994-2005

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|--|-----------------------|
| X A | JP 2003-326756 A (Yugen Kaisha Fukuoka Techno-Ken Kogyo), 19 November, 2003 (19.11.03), Par. Nos. [0012] to [0017]; Figs. 1 to 3 (Family: none) | 1-3 4-17 |

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "G" document member of the same patent family

Date of the actual completion of the international search
17 February, 2005 (17.02.05)Date of mailing of the international search report
08 March, 2005 (08.03.05)Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

第V欄 新規性、進歩性又は産業上の利用可能性についてのPCT規則43の2.1(a)(i)に定める見解、
それを裏付ける文献及び説明

1. 見解

| | | | |
|----------------|-------|------|--------|
| 新規性 (N) | 請求の範囲 | 1-17 | 有 無 |
| | 請求の範囲 | | |
| 進歩性 (IS) | 請求の範囲 | 4-17 | 有 無 |
| | 請求の範囲 | 1-3 | |
| 産業上の利用可能性 (IA) | 請求の範囲 | 1-17 | 有 無 |
| | 請求の範囲 | | |

2. 文献及び説明

文献1: JP 2003-326756 A (有限会社福岡テクノ研工業) 2003. 11. 19, 段落【0012】-【0017】, 第1-3図

請求の範囲1-3に係る発明は、国際調査報告で引用された文献1により進歩性を有しない。文献1には支持体上に個別電極と共通電極及び発熱素子を形成し、絶縁体及び誘電体で被覆し、その上に放電電極を設けたイオン発生装置が記載されており、放電電極に高電圧を印加し、発熱素子に低電圧を選択的に印加することにより放電を制御することが記載されている。文献1にはドライバICについては特に記載されていないものの、個別電極をデータに従いスイッチングすることが記載されており、請求の範囲1に係る発明のようにドライバICを具備することは、当業者が容易に想到し得ることであると認められる。また、請求の範囲2に記載された誘電電極については文献1に記載されている。さらに、請求の範囲3に係る発明のように、放電電極が個別放電電極部と共通電極部を有することは、図1より明らかである。

請求の範囲4-17に係る発明は、国際報告書に引用されたいずれの文献にも記載されておらず、当業者にとって自明なものとは認められない。特に、請求の範囲4-8に記載された放電電極の形状、配置について、請求の範囲9-11に記載された放電電極の保護被膜について、請求の範囲12-13に記載された放電制御方法について、請求の範囲14-17に記載された製造方法についてはいずれも記載されていない。

International Search Report

International application number: PCT/JP2004/18514

Written opinion from the documents to be considered

JP 2003-326756 A

The invention according to claim 1 to 3 lacks an Inventive Step from a document 1. In the document 1, it is described an ion generating unit wherein an individual electrode, a common electrode, and heat elements are formed on a support and covered with a insulting body and a conductor, on which the discharge electrode is provided. It is also described about controlling discharge by impressing high voltage to the discharge electrode and selectively impressing law voltage to the heat elements. It is not described about driver IC in the document 1, however it is described about switching the individual electrode according to a data. Therefore providing the driver IC as the invention according to claim 1 could easily have been made, prior to the filing of the patent application, by a person with ordinary skill in the art. Also an induction electrode according to claim2 is described in the document 1. Moreover as the invention according to claim 3, it is clear that the discharge electrode consists of an individual discharge electrode portion and a common electrode portion from Fig.1.

The invention according to claim 4 to 17 is not disclosed in any documents cited in the International Search Report, and not acknowledged that it is obvious for a person with ordinary skill in the art to which the invention pertains. Especially, it is not described about a shape of the discharge electrode according to claim 4 to 8, a disposition, a protection thin film of the discharge electrode according to claim 9 to 11, a discharge control method according to claim 12 to 13, and a producing method according to claim 14 to 17.